SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identification:

Product name:	SILASTIC™ RTV-3083 hardener
UFI:	YJKF-E0M0-0008-DENN

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use:	Use in industrial environments: Use in rubber production and processing.

1.3 Details of the supplier of the safety data sheet:

Responsible distributor :	ASSYST bvba / A.S.O.W. bvba Hellegatstraat 13a 2590 Berlaar Belgium Tel: +32 495 50 61 14 / +32 496 83 70 27 Website: www.assyst.org / www.artsuppliesonweb.com Email: ao@assyst.org / vera.opsommer@assyst.org

1.4 Emergency phone number:

For Belgium:	Call the **Poison Control Centre (070 245 245 - free)**, if not available: **02 264 96 30** (normal rate) or your doctor. In life-threatening situations, always call the European emergency number **112**.
NHS 24 Direct	For help from a GP, visit your GP surgery's website, use an online service to contact your GP, or call the surgery. **For urgent medical help**, use the NHS 111 online service, or **call 111** if you are unable to get help online. **For life-threatening emergencies, call 999** for an ambulance. There is more information about getting medical help on the NHS website.

SECTION 2: Identification of hazards

2.1 Classification of the substance or mixture:

Classification according to directive (EC) No 1272/2008 and its amendments.

The product is classified according to current legislation.

Classification in accordance with Regulation (EC) No 1272/2008 as amended.

Health hazards

Skin sensitisation - Category 1 - H317

Specific target organ toxicity - repeated exposure - Category 2 - Oral - H373

For the full text of H phrases referred to in this section, see section 16.

2.2 Labelling elements:

Labelling according to regulation (EC) No 1272/2008 [CLP/GHS]:

Hazard pictograms:

Signal word Warning.

Contains:

- ✓ Trimethoxyphenylsilane;
- ✓ Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane

Hazard statements:

H317 May cause an allergic skin reaction.

H373 May cause damage to organs (Bladder, Kidney) by prolonged or repeated exposure if swallowed.

Precautions

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapour/spray.
P280 Wear protective gloves.
P314 If you feel unwell, seek medical advice.
P333 + P313 In case of skin irritation or rash: consult a doctor.
P362 + P364 Remove and wash contaminated clothing before reuse.
P501 Dispose of contents/container to an authorised waste disposal company.

2.3 Other hazards:

This product does not contain any substances assessed as PBT or vPvB at concentrations of 0.1% or higher.

Endocrine-disrupting properties

Environment:

The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.

Human health:

The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.

SECTION 3: Composition and information on ingredients

3.2 Mixtures:

Chemical description: curing agent.

CAS No. EC No. Index no.	REACH registration number	Concentration	Component	Classification : REGULATION (EC) No 1272/2008
CAS NR. 2996-92-1 EC No. 221-066-9 Index no. -	01-2119964479-19	>= 10,0 - <= 13,0 %	Trimethoxyphenylsilane	Flam. Liq. 3; H226 Acute Tox. 4; H302 STOT RE 2; H373 (Bladder) Acute toxicity estimates Acute oral toxicity: 1 049 mg/kg Acute dermal toxicity: 2 471 mg/kg
CAS No. 68928-76-7 EC No. 273-028-6 Index no. -	01-2120770324-57	>= 1,4 - <= 2,7 %	Bis [(2-ethyl-2,5-dimethylhexanoyl)oxy] (dimethyl)stannane	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1A; H317 Aquatic Chronic 3; H412 Acute toxicity estimates Acute oral toxicity: 892 mg/kg Acute dermal toxicity: > 2 000 mg/kg
CAS No. 67-56-1 EC No. 200-659-6 Index no. 603-001-00-X	-	>= 0,09 - <= 0,41 %	Methanol	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT SE 1; H370 (Eyes, Central nervous system) Specific concentration limits STOT SE 1; H370 >= 10 % STOT SE 2; H371 3 - < 10 % Acute toxicity estimates Acute oral toxicity:

				> 5 000 mg/kg 340 mg/kg Acute toxicity by inhalation: 3 mg/l, 4 h, vapours Acute dermal toxicity: 15 800 mg/kg
CAS No. 681-84-5 EC No. 211-656-4 Index no. -	-	<= 0,14 %	Tetramethylorthosilicate	Flam. Liq. 3; H226 Acute Tox. 1; H330 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT RE 1; H372 (Respiratory system) Acute toxicity estimates Acute oral toxicity: > 2 500 mg/kg Acute toxicity by inhalation: 0,392 mg/l, 4 h, vapours
CAS No. 18406-41-2 EC No. 242-285-6 Index no. -	-	>= 0,014 - <= 0,023 %	1,2-Bis(trimethoxysilyl)ethane	Acute Tox. 4; H302 Acute Tox. 1; H330 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Muta. 2; H341 STOT RE 1; H372 (Nasal cavity, Respiratory system, Eyes) Acute toxicity estimates Acute oral toxicity: 1 910 mg/kg Acute toxicity by inhalation: 0,03 mg/l, 4 h, vapours

For the full text of H phrases referred to in this section, see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures:

General advice:

First aiders should take care of self-protection and use the recommended protective clothing (chemical-resistant gloves, splash protection).
If there is an exposure risk, refer to section 8 for specific personal protective equipment.

Inhalation:

Bring the person into fresh air and let them breathe comfortably.
Breathe artificially if not breathing; if mouth-to-mouth, use protection (pocket face mask, etc.).
Oxygen should be given by qualified personnel if breathing is difficult.
Contact a doctor or transport it to a medical facility.

Skin touch:

Remove the material from the skin immediately by washing with soap and plenty of water.
Remove contaminated clothing and shoes during washing.
Consult a doctor if irritation or rash occurs.
Wash clothing before reuse. Remove all accessories that cannot be disinfected, including leather goods such as shoes, belts and watch straps.
An appropriate emergency safety shower facility should be available at the workplace.

Eye contact:

Rinse eyes thoroughly with water for several minutes.
Remove contact lenses after the first 1-2 minutes and continue rinsing for several minutes.
Consult a doctor if adverse reactions occur, preferably an ophthalmologist An appropriate emergency eye wash facility should be available in the work area.

Ingestion:

In case of ingestion, consult a doctor.

Do not induce vomiting unless ordered by medical staff.
4.2 Main acute and delayed symptoms and effects:
May cause allergic skin reaction.
May cause organ damage in case of prolonged or repeated exposure if swallowed.
4.3 Indication of immediate medical attention and special treatment required:
Notes for the doctor:
May cause asthmatic symptoms (reactive airways).
Bronchodilators, expectorants, cough medicines and corticosteroids may be able to help.
No specific antidote.
Treatment of exposure should take into account the patient's symptoms and clinical condition.
Excessive repeated exposure can worsen an existing lung condition.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media:
Suitable extinguishing agents:
Alcohol-resistant foam. Dry sand. Dry powder.
Extinguishing agents not suitable from a safety point of view:
Strong water jet. Do not use a direct water jet.
5.2 Special hazards arising from the substance or mixture:
Hazardous combustion products:
Carbon oxides. Silicon oxide. Formaldehyde. Metal oxides. Nitrogen oxides (NOx).
Unusual fire and explosion hazards:
Fire recoil possible over a considerable distance.
Exposure to combination products can be hazardous to health.
Closed vessels can rupture due to pressure build-up when exposed to fire or extreme heat.
Vapours can form explosive mixtures with air.
5.3 Advice for firefighters:
Fire-fighting measures:
Use water spray to cool unopened containers.
Evacuate.
Collect contaminated firefighting water separately.
It should not drain to the sewerage system.
Combustion residues and contaminated fire fighting water must be disposed of according to local regulations.
If possible, prevent the run-off of extinguishing water.
Extinguishing water, which has run off, can cause damage to the environment.
Use water spray to cool vessels exposed to fire and the area involved in the fire until the fire is extinguished and the danger of re-ignition has passed.
Do not use a steady stream of water as it may splatter and spread the fire.
Use extinguishing agents suitable for the local conditions and environment.
Remove undamaged holder from fire area if it is safe to do so.
Special protective equipment for firefighters:
In case of fire, wear a compressed air mask.
Use personal protective equipment.

SECTION 6: Measures in case of accidental release of the substance or mixture

6.1 Personal precautions, protective equipment and emergency procedures:
Remove all ignition sources.
Use personal protective equipment.
Follow the advice on working safely with the substance and recommendations on personal protective equipment.
6.2 Environmental precautions:
Do not release the product into the aquatic environment above the legal limits.

Avoid further leaks and spills if it is safe to do so.
Prevent spreading over a large area (e.g. by containment or oil baffles).
Collect and dispose of contaminated cleaning water.
In case of significant leaks that cannot be contained, the local government should be notified.
6.3 Methods and materials for containment and cleaning:
Only use non-sparking tools.
Absorb in inert absorbent material.
Precipitate gases/fumes/mists using a water spray jet.
Wipe with absorbent material or pick it up and dispose of in a lidded bin.
Local or national regulations may apply both to leaks or disposal of the material, and to the materials used in cleaning operations.
You must determine which regulations apply.
To prevent material from spreading, appropriate barricades or other suitable containment should be used for large spills.
If material can be pumped out, the collected material should be stored in appropriate containers.
6.4 Reference to other sections:
See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage:
7.1 Precautions for safe handling of the substance or mixture:
Do not allow to come into contact with skin or clothing.
Avoid inhalation of vapour or mist.
Avoid contact with eyes.
Do not swallow.
Keep in tightly closed container.
Keep away from heat and ignition sources.
Take measures against static electricity discharges.
Prevent leaks and spread into the environment and minimise the amount released.
Use according to common rules and practices related to industrial hygiene and safety.
EMPTY DRUMS CAN BE DANGEROUS.
Empty drums contain product residues.
Follow all product safety and label regulations, even if the vessel is empty.
Use with adequate exhaust ventilation.
See Technical measures under section MEASURES TO CONTROL EXPOSURE/PERSONAL PROTECTION.
7.2 Conditions for safe storage, including incompatibilities:
Store in correctly labelled containers.
Store tightly closed.
Store in a cool and well-ventilated place.
Store according to relevant national regulations.
Keep away from heat and ignition sources.
Do not store with the following product types:
Strong oxidising agents. Explosives. Gases.
Unsuitable materials for containers:
Nothing known.
7.3 Specific end use:
Refer to the technical data sheet of this product for more information.

SECTION 8: Exposure controls/personal protection measures
8.1 Control parameters:
If exposure limits exist, they are listed below.
If no exposure limits are displayed, no values are applicable.

Component	Regulation	Type of statement	Value
Trimethoxyphenylsilane	Dow IHG	TWA	5 ppm
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane	ACGIH	TWA	0.1 mg/m3 , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of absorption through skin		
	ACGIH	STEL	0.2 mg/m3 , Tin
	Further information: A4: Not classifiable as a human carcinogen; Skin: Danger of absorption through skin		
	BE OEL	TGG 8 hr	0.1 mg/m3 , Tin
	Further information: D: Uptake of the agent through the skin, mucous membranes or eyes constitutes an important part of the total exposure. This uptake may result from both direct contact and its presence in the air.		
	BE OEL	TGG 15 min	0.2 mg/m3 , Tin
	Further information: D: Uptake of the agent through the skin, mucous membranes or eyes constitutes an important part of the total exposure. This uptake may result from both direct contact and its presence in the air.		
Methanol	ACGIH	TWA	200 ppm
	Further information: Skin: Danger of absorption through skin		
	ACGIH	STEL	250 ppm
	Further information: Skin: Danger of absorption through skin		
	2006/15/EC	TWA	260 mg/m3 200 ppm
	Further information: Indicative; skin: Identifies a potentially significant uptake through the skin		
	BE OEL	TGG 15 min	333 mg/m3 250 ppm
	Further information: D: Uptake of the agent through the skin, mucous membranes or eyes constitutes an important part of the total exposure. This uptake can result from both direct contact and its presence in the air.		
	BE OEL	TGG 8 hr	266 mg/m3 200 ppm
	Further information: D: Uptake of the agent through the skin, mucous membranes or eyes constitutes an important part of the total exposure. This uptake may result from both direct contact and its presence in the air.		
Tetramethylorthosilicate	ACGIH	TWA	1 ppm
	BE OEL	TGG 8 hr	6 mg/m3 1 ppm
1,2-Bis(trimethoxysilyl)ethane	Dow IHG	TWA	0.15 ppb
	Dow IHG	STEL	1 ppb
propane-1-ol	ACGIH	TWA	100 ppm
	Further information: A4: Not classifiable as a human carcinogen		
	BE OEL	TGG 8 hr	250 mg/m3 100 ppm

A reaction or decomposition product may be formed during handling or processing that has an exposure limit.
Methanol.
Propyl alcohol

Biological MAC values

Components	CAS No.	Control parameters	Organic trial	Sampling time	Permitted concentration	Basic
Methanol	67-56-1	Methanol	Urine	End of time shift (as soon as possible after exposure ends)	15 mg/l	ACGIH BEI

Recommended observation procedures

Monitoring the concentration of substances in the breathing zone of workers or in the general work area may be necessary to confirm compliance with occupational exposure limits and adequacy of exposure.
For some substances, biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples should be analysed by an accredited laboratory.
Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace exposure - Measurement of inhalation exposure to chemicals - Strategy to comply with occupational exposure limits). European Standard EN 14042 (Workplace atmospheres - Directive on the application and use of procedures for the assessment of exposure to chemical and biological agents).

European Standard EN 482 (Workplace atmospheres - General requirements for the implementation of procedures for measuring chemical substances).
Reference to national guidelines on methods for the determination of hazardous substances is also required.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier.
Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods.
Occupational Safety and Health Administration (OSHA), USA: sampling and analytical methods.
Health and Safety Executive (HSE), UK: methods for determining hazardous substances.
Institut für Arbeitsschutz Deutsche Gesetzlichen Unfallversicherung (IFA), Germany.
L'Institut National de Recherche et de Securité, (INRS), France.

Derived doses without effect

Trimethoxyphenylsilane

Employees

Acute - systemic effects		Acute - local effects		Long-term - systemic effects		Long-term - local effects	
Skin	Inhalation	Skin	Inhalation	Skin	Inhalation	Skin	Inhalation
20 mg/kg bw/day	130 mg/m3	n.a.	130 mg/m3	0.88 mg/kg bw/day	10 mg/m3	n.a.	130 mg/m3

Consumers

Acute - systemic effects			Acute - local effects		Long-term - systemic effects			Long-term - local effects	
Skin	Inhalation	Oral	Skin	Inhalation	Skin	Inhalation	Oral	Skin	Inhalation
4 mg/kg bw/day	26400 mg/m3	4 mg/kg bw/day	n.a.	26 mg/m3	0.43 mg/kg bw/day	2.5 mg/m3	0.17 mg/kg bw/day	n.a.	26 mg/m3

Methanol

Employees

Acute - systemic effects		Acute - local effects		Long-term - systemic effects		Long-term - local effects	
Skin	Inhalation	Skin	Inhalation	Skin	Inhalation	Skin	Inhalation
20 mg/kg bw/day	130 mg/m3	n.a.	130 mg/m3	20 mg/kg bw/day	130 mg/m3	n.a.	130 mg/m3

Consumers

Acute - systemic effects			Acute - local effects		Long-term - systemic effects			Long-term - local effects	
Skin	Inhalation	Oral	Skin	Inhalation	Skin	Inhalation	Oral	Skin	Inhalation
4 mg/kg bw/day	26 mg/m3	4 mg/kg bw/day	n.a.	26 mg/m3	4 mg/kg bw/day	26 mg/m3	4 mg/kg bw/day	n.a.	26 mg/m3

Tetramethylorthosilicate

Employees

Acute - systemic effects		Acute - local effects		Long-term - systemic effects		Long-term - local effects	
Skin	Inhalation	Skin	Inhalation	Skin	Inhalation	Skin	Inhalation
n.a.	n.a.	n.a.	n.a.	0.3 mg/kg bw/day	n.a.	n.a.	93 mg/m3

Consumers

Acute - systemic effects			Acute - local effects		Long-term - systemic effects			Long-term - local effects	
Skin	Inhalation	Oral	Skin	Inhalation	Skin	Inhalation	Oral	Skin	Inhalation
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Predicted concentration without effect

Tetramethylorthosilicate

Compartment	PNEC
Freshwater	5 mg/l
Seawater	0.5 mg/l
Freshwater deposition	4.44 mg/kg
Sea deposits	0.44 mg/kg
Bottom	0.99 mg/kg

Sewage treatment plant	> 1 mg/l

8.2 Exposure control measures:

Technical controls:

Apply technical measures to keep airborne concentrations below exposure limits/guidelines.
If no exposure limits/guidelines exist, use only with adequate ventilation.
Local extraction may be necessary for some work.

Personal protection devices:

Eye/face protection:

Use safety glasses with side shields.
Safety glasses with side shields must comply with standard EN 166 or a similar standard.

Skin protection

Hand protection: Use chemical-resistant gloves, classified under EN374: gloves for protection against chemicals and micro-organisms.
Examples of preferred barrier glove materials: Butyl rubber Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton.
Examples of acceptable barrier glove materials include: Natural rubber (latex).
When prolonged or frequently repeated contact may occur, gloves with a protection class 5 or higher (breakthrough time greater than 240 minutes according to EN 374) are recommended.
When only brief contact is expected, gloves with a protection class 3 or higher (breakthrough time greater than 60 minutes according to EN 374) are recommended.
Glove thickness alone is not a good indicator of the level of protection a glove gives against a chemical, as this level of protection is also highly dependent on the specific composition of the material the glove is made of.
Depending on the material model and type, the thickness of the glove should generally be more than 0.35 mm. to provide sufficient protection in continuous and regular contact with the fabric.
As an exception to this general rule, multilayer laminate gloves are known to provide further protection at thicknesses below 0.35 mm.
Other glove materials with a thickness less than 0.35 mm. can provide sufficient protection when only brief contact is expected.
ATTENTION: The selection of specific gloves for a given application and time of use in a workplace should also take into account all other relevant factors at the workplace, such as (but not limited to): other chemicals that may be handled, physical requirements (protection against cutting/ piercing, dexterity, thermal protection), possible physical reactions to the glove material, and the instructions/specifications of the glove supplier.

Other protection:

Use non-permeable protective clothing that can withstand this product.
The choice of specific items such as face mask, gloves, boots, apron or full suit depends on the work.

Respiratory protection:

A respirator should be worn when there is a risk of exceeding exposure limits.
If no exposure limits or guidelines exist, use an approved respirator.
When respiratory protection is required, use an approved fresh air respirator (type: positive pressure) or an approved fresh air respirator (type: positive pressure) with supplemental air supply.

Managing environmental exposure

See SECTION 7: Handling and storage and SECTION 13:Instructions for disposal measures to prevent excessive exposure to the environment during use and waste disposal.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Prevent

Physical state:	liquid
Colour:	Clear to slightly turbid, colourless
Smell:	light
Odour threshold:	No data available

pH:	Not applicable, substance/mixture not soluble (in water)
Melting/freezing point	
Melting point/range:	No data available
Freezing point:	Not implemented
Boiling point (760 mmHg)	:> 65°C
Flash point:	Pensky-Martens closed cup 64°C
Flammability (solid, gas):	Not applicable
Flammability (liquids):	Not applicable
Lower explosion limit:	No data available
Upper explosion limit:	No data available
Vapour pressure:	No data available
Relative vapour density (air = 1):	No data available
Relative density (water = 1):	0.962
Solubility in water:	Not applicable
Partition coefficient: n-octanol/water:	Not exported
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Kinematic viscosity:	No data available
Particle characteristics	
Particle size:	Not applicable
9.2 Other information	
Molecular weight:	No data available
Dynamic viscosity:	40 mPa.s
Explosive properties:	Non-explosive
Oxidising properties:	The substance or mixture is not classified as oxidising.
Self-heating substances:	The substance or mixture is not classified as self-heating.
Corrosion rate of metal:	Not corrosive to metals
Evaporation rate (Butyl acetate = 1):	No data available

NOTE :The physical and chemical data shown in section 9 are typical values for this product and are not intended as product specifications.

SECTION 10: Stability and reactivity

10.1 Reactivity:
Not classified as hazardous due to reactivity.
10.2 Chemical Stability:
Stable under normal conditions.
10.3 Potential Hazardous Reactions:
May react with strongly oxidising substances.
Vapours may form explosive mixture with air.
Flammable liquid.
10.4 Conditions to avoid:
Heat, flames and sparks.
10.5 Chemically Interacting Materials:
Avoid contact with oxidising substances.
10.6 Hazardous Decomposition Products:
Decomposition products may include - among others - the following: Formaldehyde. Propyl alcohol. Methanol. Benzene.

SECTION 11: Toxicological information

Toxicological information is displayed in this section when available.

11.1 Information on toxicological effects:

Information on likely routes of exposure

Inhalation, Eye contact, Skin contact, Ingestion.

Acute toxicity (represents short-term exposures with immediate effects - no chronic/delayed effects known unless otherwise stated)

Endpoints acute toxicity:

Acute oral toxicity

Information for the product:

Very low toxicity if swallowed.

Ingestion may cause irritation of the gastrointestinal tract.

May cause nausea or vomiting.

As product. The oral LD50 of a single dose has not been determined.

Based on information for component(s):

LD50, > 5 000 mg/kg estimated

Information for components:

Trimethoxyphenylsilane

Based on product testing: LD50, Rat, 1 049 mg/kg

This substance can hydrolyse to release methanol.

Methanol is extremely toxic to humans and can cause effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis and degenerative damage to other organs, including life, kidneys and heart.

Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane

LD50, Rat, male and female, 892 mg/kg OECD 401 or equivalent

Methanol

Methanol is extremely toxic to humans and can cause effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis and degenerative damage to other organs, including life, kidneys and heart. Effects may occur later. LD50, Rat, > 5 000 mg/kg

Fatal dose, Humans, 340 mg/kg estimated

Fatal dose, People, 29 - 237 ml estimated

Tetramethylorthosilicate

For similar substance(s) LD50, Rat, male and female, > 2 500 mg/kg Guideline test OECD 423.

No deaths were observed at this concentration.

1,2-Bis(trimethoxysilyl)ethane

LD50, Rat, 1 910 mg/kg

This substance can hydrolyse to release methanol.

Methanol is extremely toxic to humans and can cause effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis and degenerative damage to other organs, including life, kidneys and heart.

Acute dermal toxicity

Information for the product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product. The dermal LD50 has not been determined.

Based on information for component(s):

No data available, > 2 000 mg/kg

Information for components:

Trimethoxyphenylsilane

For similar substance(s) LD50, Rabbit, male, 2 471 mg/kg OECD 402 or equivalent.

This substance can hydrolyse to release methanol.

The effects of methanol are the same as those observed with oral ingestion and exposure via inhalation and include effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis, damage to other organs such as the liver, kidneys and heart and even death.

Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane

LD50, Rat, > 2 000 mg/kg
Methanol
The effects of methanol are the same as those observed with oral ingestion and exposure via inhalation and include effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis, damage to other organs such as the liver, kidneys and heart and even death.
LD50, Rabbit, 15 800 mg/kg.
Tetramethylorthosilicate
The dermal LD50 has not been determined.
1,2-Bis(trimethoxysilyl)ethane
The dermal LD50 has not been determined.
This substance can hydrolyse to release methanol.
The effects of methanol are the same as those observed with oral ingestion and exposure via inhalation and include effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis, damage to other organs such as the liver, kidneys and heart and even death.
Acute toxicity by inhalation
Information for the product:
It is unlikely that short-term exposure (a few minutes) would cause adverse effects.
Mists can cause irritation of the upper respiratory tract (nose and throat) and lungs.
Overexposure may cause dizziness, drowsiness.
As product. The LC50 was not determined.
Information for components:
Trimethoxyphenylsilane
The LC50 was not determined.
This substance can hydrolyse to release methanol.
Inhalation of methanol can cause effects ranging from headache, narcosis and weakening of vision, to metabolic acidosis, blindness and even death.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
As product. The LC50 was not determined.
Methanol
Easily accessible vapour concentrations can cause serious adverse effects, even death.
At lower concentrations: May induce respiratory irritation and central nervous system depression.
Symptoms may include headache and dizziness and progress to lack of coordination and loss of consciousness.
Inhalation of methanol can cause effects ranging from headache, narcosis and weakening of vision, to metabolic acidosis, blindness and even death.
Effects may occur later.
LC50, Rat, 4 h, vapours, 3 mg/l
Tetramethylorthosilicate
LC50, Rat, male, 4 h, vapours, 0.392 mg/l Guideline test OECD 403
1,2-Bis(trimethoxysilyl)ethane
LC50, Rat, 4 h, vapours, 0.03 mg/l
This substance can hydrolyse to release methanol.
Inhalation of methanol can cause effects ranging from headache, narcosis and weakening of vision, to metabolic acidosis, blindness and even death.
Skin corrosion/irritation
Information for the product:
Based on information for component(s):
Brief exposure (skin contact) may cause mild skin irritation with local redness.
Information for components:
Trimethoxyphenylsilane
Prolonged contact is essentially non-irritating to the skin.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Brief contact may cause skin irritation with local redness.

Methanol
Prolonged contact may cause mild skin irritation with local redness.
Tetramethylorthosilicate
Brief exposure (skin contact) may cause mild skin irritation with local redness.
1,2-Bis(trimethoxysilyl)ethane
Prolonged contact may cause burns.
Symptoms may include pain, severe redness and tissue damage.

Serious eye damage/eye irritation

Information for the product:
Based on information for component(s):
May cause transient mild eye irritation
May cause transient, mild corneal damage.
May cause mild eye discomfort.
Information for components:
Trimethoxyphenylsilane
Essentially non-irritating to the eyes.
Corneal damage is unlikely.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
May cause slight eye irritation.
May cause transient, mild corneal damage.
Methanol
May cause eye irritation.
Tetramethylorthosilicate
Can cause severe irritation with corneal damage, resulting in permanent vision impairment, even blindness.
Chemical burns possible.
Vapours may cause severe eye irritation.
1,2-Bis(trimethoxysilyl)ethane
May cause severe eye irritation.

Sensitisation

In case of skin hypersensitivity:
May cause allergic skin reaction.
Information for the product:
In case of skin hypersensitivity:
Contains one or more ingredients that caused allergic skin sensitisation in the Guinea pig.
Respiratory sensitisation:
No relevant data found.
Information for components:
Trimethoxyphenylsilane
In case of skin hypersensitivity:
For similar substance(s).
Did not cause allergic skin reactions when tested with guinea pigs.
Respiratory sensitisation:
No relevant data found.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Has caused allergic skin reactions in guinea pig trials.
Respiratory sensitisation:
No relevant data found.
Methanol
In case of skin hypersensitivity:
No relevant data found.
Respiratory sensitisation:
No relevant data found.

Tetramethylorthosilicate
For similar substance(s)
Did not cause allergic skin reactions when tested with guinea pigs.
Respiratory sensitisation:
No relevant data found.
1,2-Bis(trimethoxysilyl)ethane
In case of skin hypersensitivity:
No relevant data found.
Respiratory sensitisation:
No relevant data found.

Specific target organ system toxicity (single exposure)

Information for the product:
Available data are insufficient to determine an exposure-specific target organ toxicity.
Information for components:
Trimethoxyphenylsilane
Evaluation of available data suggests that this material is not an STOT-SE toxin.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Available data are insufficient to determine an exposure-specific target organ toxicity.
Methanol
Causes damage to organs.
Target organs: Eyes, Central nervous system.
Tetramethylorthosilicate
Available data are insufficient to determine an exposure-specific target organ toxicity.
1,2-Bis(trimethoxysilyl)ethane
Available data are insufficient to determine an exposure-specific target organ toxicity.

Inhalation hazard

Information for the product:
Based on the physical properties, inhalation hazards are unlikely to exist.
Information for components:
Trimethoxyphenylsilane
May be harmful if swallowed and enter the respiratory tract.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Based on the physical properties, inhalation hazards are unlikely to exist.
Methanol
May be harmful if swallowed and enter the respiratory tract.
Tetramethylorthosilicate
May be harmful if swallowed and enters airways.
1,2-Bis(trimethoxysilyl)ethane
Based on available information, no inhalation hazard could be identified.

Chronic toxicity (represents long-term repeated dose exposure resulting in chronic/delayed effects - no immediate effects known unless otherwise stated)

Specific target organ system toxicity (repeated exposure)

May cause damage to organs (Bladder) in case of prolonged or repeated exposure if swallowed.
Information for the product:
Contains ingredients reported to cause effects in animals on the following organs:
Blood
Liver
Kidney
Bladder
Immunity system.
Information for components:
Trimethoxyphenylsilane

In animals, effects to the following organs have been observed:
Blow.
Kidney.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
In animals, effects to the following organs have been observed:
Blood
Kidney
Liver
Immunity system.
Methanol
Methanol is extremely toxic to humans and can cause effects to the central nervous system, obstruction of vision to blindness, metabolic acidosis and degenerative damage to other organs, including life, kidneys and heart.
Tetramethylorthosilicate
In animals, effects to the following organs have been observed:
Influences on breathing.
1,2-Bis(trimethoxysilyl)ethane
In animals, effects to the following organs have been observed:
Nasal cavity
Airways.
Eye.

Carcinogenicity

Information for the product:
Contains component(s) that did not cause cancer in long-term studies in animals using exposure routes considered relevant for industrial handling.
Information for components:
Trimethoxyphenylsilane
No relevant data found.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
No relevant data found.
Methanol
Did not cause cancer in laboratory animals.
Tetramethylorthosilicate
No relevant data found.
1,2-Bis(trimethoxysilyl)ethane
No relevant data found.

Teratogenicity

Information for the product:
Contains component(s) that did not cause birth defects or effects to the foetus in laboratory animals.
Information for components:
Trimethoxyphenylsilane
Did not cause birth defects or other foetal effects in laboratory animals.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
No relevant data found.
Methanol
Methanol caused birth defects in mice, at dose non-toxic to the mother animal as well as mild behavioural effects in the offspring of rats.
Tetramethylorthosilicate
For similar substance(s) Did not cause birth defects or other effects to the foetus, even at doses that caused toxic effects in the mother.
1,2-Bis(trimethoxysilyl)ethane
No relevant data found.

Reproductive toxicity
Information for the product:
Contains component(s), which, in animal studies, did not interfere with reproduction. Contains component(s), which, in studies on animals, did not interfere with fertility.
Information for components:
Trimethoxyphenylsilane
In animal studies, the product had no effects on reproduction.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
No relevant data found.
Methanol
In animal studies, the product had no effects on reproduction.
Tetramethylorthosilicate
For similar substance(s) In animal studies, the product had no effects on reproduction.
1,2-Bis(trimethoxysilyl)ethane
No relevant data found.
Mutagenicity
Information for the product:
Contains one or more components that have given negative results in some in vitro genetic toxicity studies, positive results in others.
Mutagenicity studies in animals have given negative results for the components studied.
Information for components:
Trimethoxyphenylsilane
In vitro studies of genetic toxicity were negative in some cases and positive in others.
For similar substance(s) Genetic toxicity studies on animals were negative.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
In vitro studies of genetic toxicity were negative in some cases and positive in others.
Genetic toxicity studies on animals were negative.
Methanol
Results of genetic toxicity studies in vitro were negative.
Genetic toxicity studies in animals were negative in some cases and positive in others.
Tetramethylorthosilicate
Results of genetic toxicity studies in vitro were negative.
Genetic toxicity studies on animals were negative.
1,2-Bis(trimethoxysilyl)ethane
In vitro studies of genetic toxicity were negative in some cases and positive in others.
11.2 Information on other hazards
Endocrine-disrupting properties
The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.
Information for components:
Trimethoxyphenylsilane
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
Methanol
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
Tetramethylorthosilicate

This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
1,2-Bis(trimethoxysilyl)ethane
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

SECTION 12: Ecological information

Ecotoxicological information appears in this section when these data are available.
12.1 Toxicity:
Trimethoxyphenylsilane
Acute toxicity to fish
Material is not classified as hazardous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 are greater than 100 mg/L for the most sensitive species).
Based on data from similar materials
LC50, Oncorhynchus mykiss (rainbow trout), 96 h, > 100 mg/l, Guideline test OECD 203.
Acute toxicity to aquatic invertebrates
For similar substance(s)
EC50, Daphnia magna (large water flea), 48 h, > 100 mg/l, OECD Test Guideline 202.
Acute toxicity to algae/ aquatic plants
For similar substance(s)
ErC50, Pseudokirchneriella subcapitata (green algae), 72 h, Growth rate, > 100 mg/l, OECD test guideline 201
For similar substance(s)
NOEC, Pseudokirchneriella subcapitata (green algae), 72 h, Growth rate, >= 100 mg/l, OECD test guideline 201.
Toxicity to bacteria
Based on data from similar materials
EC50, activated sludge, 3 h, Respiratory rate, > 1 000 mg/l, OECD test guideline 209.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Acute toxicity to fish
Dust is harmful to aquatic organisms (LC50/EC50/IC50 are between 10 and 100 mg/L for the most sensitive species).
For similar substance(s)
LC50, Zebra fish (Danio/Brachydanio rerio), semi-static test, 96 h, > 100 mg/l, OECD Guideline 203 or equivalent.
Acute toxicity to aquatic invertebrates
EC50, Daphnia magna, static test, 48 h, 39 mg/l, OECD Guideline 202 or equivalent.
Acute toxicity to algae/ aquatic plants
ErC50, Algae (Scenedesmus subspicatus), Growth rate, 72 h, Growth rate, 7.6 mg/l, OECD Guideline 201 or Equivalent
For similar substance(s)
NOEC, Algae (Scenedesmus subspicatus), Growth rate, 72 h, Growth rate, 1.1 mg/l, OECD Guideline 201 or Equivalent.
Toxicity to bacteria
For similar substance(s)
EC50, Bacteria, 3 h, Respiratory rate, 14 mg/l
Methanol
Acute toxicity to fish
On an acute basis, the product is practically non-toxic to aquatic organisms (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Material is not classified as hazardous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 are greater than 100 mg/L for the most sensitive species).
LC50, Bluegill sunfish(Lepomis macrochirus), flow-through test, 96 h, 15 400 mg/l
Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (large water flea), 48 h, > 10 000 mg/l
Acute toxicity to algae/ aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), 96 h, Growth rate, 22 000 mg/l, OECD Guideline 201 or Equivalent
Toxicity to bacteria
IC50, activated sludge, 3 h, Respiratory rate, > 1 000 mg/l, OECD test guideline 209
Chronic toxicity for fish
NOEC, Oryzias latipes (Japanese rice fish), 200 h, 15 800 mg/l
Tetramethylorthosilicate
Acute toxicity to fish
On an acute basis, the product is practically non-toxic to aquatic organisms (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Material is not classified as hazardous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 are greater than 100 mg/L for the most sensitive species).
For similar substance(s)
LC50, Zebra fish (Danio/Brachydanio rerio), 96 h, > 245 mg/l
Acute toxicity to aquatic invertebrates
For similar substance(s)
EC50, Daphnia magna (large water flea), 48 h, > 500 mg/l
Acute toxicity to algae/ aquatic plants
For similar substance(s)
ErC50, Pseudokirchneriella subcapitata (green algae), 72 h, Growth inhibition, > 100 mg/l
1,2-Bis(trimethoxysilyl)ethane
Acute toxicity to aquatic invertebrates
The material is mildly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive test species).
Dust is harmful to aquatic organisms (LC50/EC50/IC50 are between 10 and 100 mg/L for the most sensitive species).
For similar substance(s)
EL50, Daphnia magna (large water flea), 48 h, 92.2 mg/l, OECD Guideline 202 or Equivalent
Acute toxicity to algae/ aquatic plants
For similar substance(s)
EL50, Pseudokirchneriella subcapitata (green algae), 72 h, Growth rate, 671 mg/l, OECD Guideline 201 or Equivalent
12.2 Persistence and Degradability:
Trimethoxyphenylsilane
Biodegradability:
Based on data from similar materials
Biodegradation: 1 %
Exposure time: 28 d
Method: Guideline test OECD 310
This substance is not readily biodegradable according to OECD/EC criteria.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Biodegradability:
For similar substance(s) The material is expected to be very slowly degradable in the environment.
Does not pass OECD / EEC tests for biodegradability.
For similar substance(s) Time interval per 10 days : unsuccessful
Biodegradation: 3 %
Exposure time: 28 d
Method: OECD Directive 301F or equivalent
Methanol
Biodegradability:

The material readily biodegrades. Passes OECD test(s) for rapid biodegradability.
Tetramethylorthosilicate
Biodegradability:
For similar substance(s) The material readily biodegrades. Passes OECD test(s) for rapid biodegradability.
For similar substance(s) Time interval per 10 days: passed
Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Directive 301A or equivalent
Stability in water (half-life):
Hydrolysis, DT50, < 3 min, pH 7
1,2-Bis(trimethoxysilyl)ethane
Biodegradability:
The material readily biodegrades. Passes OECD test(s) for rapid biodegradability.
Biodegradation: 64 %
Exposure time: 28 d
Method: OECD Directive 301B or equivalent
12.3 Bioaccumulation:
Trimethoxyphenylsilane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): < 1 OECD Guideline 107 or Equivalent
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
Bioaccumulation: No relevant data found.
Methanol
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.77 Measured
Bioconcentration factor (BCF): < 10 Leuciscus idus (golden bindweed) Measured
Tetramethylorthosilicate
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.5 estimated
1,2-Bis(trimethoxysilyl)ethane
Bioaccumulation: Bioconcentration potential is low (BCF < 100 or log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -1.68 at 25 °C
12.4 Mobility in soil:
Trimethoxyphenylsilane
Partition coefficient (Koc): 7500 estimated
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
No relevant data found.
Methanol
Partition coefficient (Koc): 0.44 estimated
Tetramethylorthosilicate
No relevant data found.
1,2-Bis(trimethoxysilyl)ethane
No relevant data found.
12.5 Results of PBT and vPvB assessment:
Trimethoxyphenylsilane
This substance is not considered persistent, bioaccumulative and toxic (PBT).
This substance is not considered very persistent and very bioaccumulative (vPvB).
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
Methanol
This substance is not considered persistent, bioaccumulative nor toxic (PBT).
This substance is considered neither very persistent nor very bioaccumulative (vPvB).

Tetramethylorthosilicate
This substance is not considered persistent, bioaccumulative nor toxic (PBT).
This substance is considered neither very persistent nor very bioaccumulative (vPvB).
1,2-Bis(trimethoxysilyl)ethane
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).
12.6 Endocrine disrupting properties
The substance/mixture does not contain any components believed to have endocrine-disrupting properties according to REACH article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at level 0.1% or higher.
Trimethoxyphenylsilane
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
Methanol
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
Tetramethylorthosilicate
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
1,2-Bis(trimethoxysilyl)ethane
This substance is not considered to have endocrine-disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.
12.7 Other Harmful Effects:
Trimethoxyphenylsilane
This substance is not on the Montreal Protocol list of ozone-depleting substances.
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane
This substance is not on the Montreal Protocol list of ozone-depleting substances.
Methanol
This substance is not on the Montreal Protocol list of ozone-depleting substances.
Tetramethylorthosilicate
This substance is not on the Montreal Protocol list of ozone-depleting substances.
1,2-Bis(trimethoxysilyl)ethane
This substance is not on the Montreal Protocol list of ozone-depleting substances.

SECTION 13: Disposal instructions
13.1 Waste treatment methods:
Do not discharge into sewers, soil or surface water.
This product, when disposed of in its unused and uncontaminated state, must be treated as hazardous waste according to EC Directive 2008/98/EC.
Disposal practices must comply with all national and provincial laws and any municipal or local bylaws on hazardous waste.
Additional evaluations may be required for used, contaminated and residual material.
The assignment of an appropriate EWC waste group as well as an EWC waste code specific to this product depends on the application for which this product has been used.
Consultation with waste management service.

SECTION 14: Information relating to transport
14.1 UN number
Not applicable
14.2 Proper cargo name according to UN model regulations

Not regulated for transport
14.3 Transport hazard class(es)
Not applicable
14.4 Packing group
Not applicable
14.5 Environmental hazards
Not considered environmentally / marine hazardous based on available data.
14.6 Special precautions for the user
No data available.
14.7 Transport in bulk in accordance with Annex II to MARPOL 73/78 and the IBC Code
Consult IMO regulations before transporting ocean bulk
This information is not intended to disclose all specific legislation, operational requirements/information on this product. Additional information on transport can be obtained from a sales representative or customer service department. It is the responsibility of the transport company to comply with all legal provisions relating to the transport of goods.

SECTION 15: Statutory information

15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture:
REACH Regulation (EC) No 1907/2006
This product contains components that are registered, exempted from registration, considered to be registered or not subject to registration as regulated by Regulation (EC) No 1907/2006 (REACH).,The aforementioned indications of REACH registration status are provided to the best of our knowledge and are believed to be accurate as of the date shown above. However, express or implied warranties are given. It is the responsibility of the buyer/user to ensure that his/her understanding of the regulatory status of this product is correct.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
Restriction conditions for the following dates should be considered:
Number on the list 3, 75
Bis [(2-ethyl-2,5-dimethylhexanoyl) oxy] (dimethyl) stannane (Number on the list 20)
Methanol (Number on list 69, 75)
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Specified in regulation: Not applicable
Further information
Take into account Directive 94/33/EC on the protection of young people at work or stricter national legislation, if applicable.
15.2 Chemical safety assessment:
No chemical safety assessment has been carried out for this substance/mixture.

SECTION 16: Other information

Full text of H-phrases in sections 2 and 3

H225:	Highly flammable liquid and vapour.
H226:	Flammable liquid and vapour.
H301:	Toxic if swallowed.
H302:	Harmful if swallowed.
H311:	Toxic in contact with skin.
H315:	Causes skin irritation.
H317:	May cause an allergic skin reaction.
H318:	Causes serious eye damage.
H319:	Causes severe eye irritation.
H330:	Fatal by inhalation.
H331:	Toxic by inhalation.

H341:	Suspected of causing genetic damage.
H370:	Causes damage to organs if swallowed.
H372:	Causes damage to organs through prolonged or repeated exposure by inhalation.
H373:	May cause damage to organs through prolonged or repeated exposure if swallowed.
H412:	Harmful to aquatic life with long lasting effects.

Classification and procedure are used to derive the classification for mixtures from Directive (EC) No 1272/2008
Skin Sens. - 1 - H317 - Calculation method
STOT RE - 2 - H373 - Calculation method

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Abbreviations and acronyms:

2006/15/EC:	Indicative occupational exposure limit values
ACGIH:	USA. ACGIH Threshold Limit Values (TLV).
ACGIH BEI:	ACGIH - Biological Exposure Indices (BEI - biological exposure indices)
BE OEL:	Occupational exposure limits
Dow IHG:	Dow IHG
STEL:	Short-term exposure limit
TGG 15 min:	Short-time value
TGG 8 hr:	Limit value
TWA:	Time-weighted average
Acute Tox.:	Acute toxicity
Aquatic Chronic:	(Chronic) Aquatic long-term hazard
Eye Dam.:	Serious eye damage
Eye Irrit.:	Eye irritation
Flam. Liq.:	Flammable liquids
Muta:	Mutagenicity in gametes
Skin Irrit.:	Skin corrosion/irritation
Skin	sensitisation
STOT RE:	Specific target organ toxicity - repeated exposure
STOT SE:	Specific target organ toxicity - single exposure

Full text of other abbreviations
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road (ADR Agreement); AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Association for the Testing of Materials; bw - Body Weight; CLP - Regulation on Classification, Labelling and Packaging; Regulation (EC) No 1272/2008; CMR - Carcinogenic, mutagenic or toxic to reproduction; DIN - Standard or the German Institute for Standardisation; DSL - List of substances used indoors (Canada); ECHA - European Chemicals Agency; EC-Number - EINECS number; ECx - Concentration associated with x% response; ELx - Charge capacity associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemicals (Japan); ErCx - Concentration associated with x% growth response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - IMO International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk; IC50 - Half-Maximum Inhibitory Concentration; ICAO - International Civil Aviation Organisation; IECSC - Inventory List of Existing Chemicals in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korean Inventory of Existing Chemicals; LC50 - Lethal concentration for 50% of a test population; LD50 - Lethal dose for 50% of a test population (lethal dose median); MARPOL - International Convention for the Prevention of Pollution

from Ships; n.o.s. - Not otherwise specified; NO(A)EC - No discernible (negative) effect on concentration; NO(A)EL - No discernible (negative) effect on Level; NOELR - No discernible effect on cargo capacity; NZIoC - New Zealand inventory of chemicals; OECD - Organisation for Economic Co-operation and Development OECD; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, bioaccumulative and toxic substance; PICCS - Philippine inventory of chemicals and chemical substances; (Q)SAR - (Quantitative) structure-activity relationships; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH); RID - Regulations concerning the International Carriage of Dangerous Goods by Rail (RID); SADT - Self-accelerating decomposition temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwanese Inventory of Chemical Substances; TECI - Inventory of Chemical Substances Existing in Thailand; TRGS - Technical Regulation on Hazardous Substances; TSCA - Toxic Substances Control Act (USA); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Information source and references
This safety data sheet was prepared by Product Regulatory Services and Hazard Communications Groups from information by internal references within our company.

DOW BENELUX B.V. asks each customer or recipient of this Safety Data Sheet (MSDS) to read it carefully and, if necessary, to consult the appropriate experts to understand the information contained in this MSDS and to be aware of the hazards presented by the product. The information in this document is given in good faith and is believed to be correct at the date of creation of this document. However, no express or implied warranty is given. Legal provisions may change and they may be different depending on the country. It is the buyer/user's responsibility to ensure that their activities comply with all local legal provisions. The information in this document relates only to the product as shipped.Since the conditions under which the product is used cannot be controlled by the manufacturer, the buyer/user must determine the conditions under which the product can be used in complete safety. Due to the proliferation of information sources, such as Safety Data Sheets (MSDS) from various manufacturers, we are not and cannot be responsible for MSDS obtained from other sources. If you have received a Safety Data Sheet from another source, or if you are not sure that you are in possession of the latest version of a Safety Data Sheet, please contact us.